

REMARKS

Original Claims 1-21 were pending in the subject application, including independent Claims 1, 12, and 21. After entry of the amendment set forth above, Claims 1-31 are pending, including independent Claims 1, 12, 21, 22 and 26.

In section 1 of the current Office Action, the Examiner objects to Figures 1, 2 and 3 as requiring a designation as "Prior Art." Figures 2 and 3 are amended hereby as requested by the Examiner. However, Figure 1 is referenced in regard to the description of material in the Detailed Description of the Invention. It is respectfully submitted that designation as "Prior Art" would improperly imply that such description is not new, and, as such, the Applicants respectfully decline to make such an apparent admission.

In section 2 of the current Office Action, the Examiner objects to the terms "T_Add" and "PSMM." These objections have been responded to by amendment of the objected claims.

In section 3 of the current Office Action, the Examiner rejects independent Claims 1, 12, and 21 under 35 USC § 112 as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These grounds for rejection are traversed in part.

In section 4 of the current Office Action, the Examiner rejects pending Claims 1, 2, 4-7, 9, 11-18, and 21 under 35 USC § 103(a) as obvious over U.S. Patent Publication 2002/0037726A1 to Czaja ("Czaja") in view of U.S. Patent 6,181,738 to Chheda ("Chheda"). These grounds for rejection are respectfully traversed.

Amendments to the Claims

No new matter is added by the present amendments, which are explained in more detail below.

Claims 1, 12, and 21 have been amended by deleting a phrase from the preamble, and they are not narrowed thereby. It is respectfully submitted that the deleted phrase merely described a suggested use, and as such did not limit the scope of the claim as originally filed.

Claims 4 and 13 have been amended by substantially incorporating the preamble phrases deleted from independent Claims 1 and 12, respectively. Properly construed, such amendment narrows Claims 4 and 13 in part. However, such narrowing is not "for purposes of patentability," because patentability is conferred by the allowability of Claims 1 and 12. Rather, Claims 4 and 13, as presently amended, retain the deleted phrases as proof against an improper future construction, whereby the deleted phrases are deemed to have been limiting. Claims 4 and 13 have also been broadened, in part, by deleting an original limitation.

Claim 3 is amended in two places, neither of which is narrowing, in response to the Examiner's clarity rejections. A "threshold parameter T_Add" is not different in scope from the original "T_Add parameter." Replacement of the acronym PSMM by the represented words is also non-narrowing.

Claim 12 has been further amended to replace "means for" language by generic apparatus language that is inherent in the system described by the Applicants. Other language is modified to be consistent with such generic apparatus language. This non-narrowing amendment is not for purposes of patentability, but rather to invoke proper claim construction, avoiding (in view of *Donaldson*) an excessively narrow construction pursuant to 35 USC 112, sixth paragraph. Claim 12 is further broadened by deletion of "wherein the hard handoff initiation means is responsive to the serving base station, and wherein the hard handoff initiation means initiates a reverse link intergenerational hard handoff when the serving base station transmits an intergenerational handoff direction message to the mobile station."

Claim 14 has been clarified to correct a logical error. Support for the amendment may be found, for example, at page 21 lines 1-7 of the Applicants' specification.

Claims 18-20 have been amended, without narrowing, to clarify antecedent bases. The original language would not actually impair patentability; hence, the amendment is to facilitate interpretation, rather than for purposes relating to patentability.

Claim 21 is amended, as noted above, by deletion of a non-limiting preamble phrase. Claim 21 is also amended to replace the informal "initiating" with --directing initiation of--. The informal language would ultimately be properly interpreted. This amendment is for the purpose of reducing the effort required to reach such proper interpretation, rather than for purposes of patentability.

New Claims 22, 23, and 26 are supported, for example, by Claim 3 as originally filed. As compared to Claim 3, as originally filed, new Claim 26 omits limitation to Eb/Nt.

New Claims 24-25, which further limit Claims 19 and 20, respectively, are supported, for example, by Claim 18 as originally filed.

New Claims 27 and 28 are supported, for example, by Claims 6 and 5, respectively, as originally filed.

New Claims 29-31 are supported, for example, by Claim 3 as originally filed.

Rejections under 35 USC § 112

The Examiner rejects pending Claims 1, 12, and 21 as indefinite, asserting that the term “different generations...” is not defined in the claims. However, it is respectfully submitted that the term is well understood by those skilled in the art, a position that is supported by the fact that the term is acknowledged in the background section of the Applicants’ specification. In the alternative, were a finder of fact to conclude that the term was not readily understood by those skilled in the art in a manner compatible with the use of the term by the Applicants, then the description of the term in the Applicants’ specification, for example from page 6 line 14 to page 7 line 17, would be found to provide adequate definition. Because, in either event, the term is not indefinite, the Examiner is respectfully requested to withdraw these grounds of rejection.

The Examiner states “it is unclear whether the different generations mean the generation between 1st generation, 2nd generation, 2.5th generation, and/or 3d generation. The specification does not clearly provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised [*sic*] of the scope of the invention.” The Examiner’s statement echoes directions that are set forth in the MPEP at section 2173.05(b). However, the directions of MPEP 2173.05(b) are applicable only when a term of degree is present (see first two paragraphs of cited section). In the present instance, “different generations ...” is not a term of degree. Interpreted properly in accordance with MPEP section 2111, the plain meaning of “different generations ... “ means any different generations. Because the term is not one of degree, it is not satisfied if the generations are identical, but is satisfied at least if the generations are distinguishably different.

The Examiner also rejects Claims 1, 12, and 21, as previously pending, as rendered indefinite by the presence of the term “reverse link,” which he asserts is not defined, and is therefore indefinite. These grounds for rejection are respectfully traversed. The Applicants’ specification recites in part (at page 2, lines 6-7): “[t]ransmissions from a mobile station to a base station are referred to as “reverse link” transmissions.” It is respectfully submitted that this statement properly and unambiguously defines the term “reverse link.” Moreover, this definition accords with the usual understanding of the term by those skilled in the art, which is evidenced, for example, by a substantially identical definition provided in Chheda (see col. 1 lines 56-59). As such, the Examiner is respectfully requested to withdraw these grounds for rejection.

Rejections under 35 USC § 103

In section 4 of the current Office Action, the Examiner rejects pending Claims 1, 2, 4-, 9, 11-18, and 21 as unpatentable over Czaja in view of Chheda. These grounds for rejection are respectfully traversed.

As an initial matter, it is noted that both inventors of the Czaja application are also inventors of the subject application. As such, the Applicants expressly reserve the right to later assert that the material relied upon in Czaja is in fact the applicants' own work, and as such is effectively not available as prior art to the subject application. However, such assertion is not relied upon in the reasons that are set forth below for traversing the Examiner's rejection.

Teachings of the Cited References

Czaja (U.S. 2002/0037726A1) teaches a forward link inter-generation soft-handoff between 2G and 3G CDMA systems based on the mobile station's measurement of the signal strength of received pilot (E_c/I_o) signals from all base stations (2G and 3G). The base station with the strongest pilot signal is selected and the other base stations are dropped. Aside from a note on the impracticality of reverse-link soft handoffs (see par. 30 on pg. 2), Czaja does not address reverse-link handoffs. While some sort of reverse-link handoff is implicit, no details are provided in regard to decisions about initiating or performing reverse-link handoffs.

Chheda (U.S. Patent 6,181,738 B1) is primarily directed to using a Frame Quality Metric ("FQM") for reverse link power control. This fact is clearly reflected in the title: "Reverse Link Power Control Using a Frame Quality Metric." The FQM is determined based entirely upon an evaluation of data detected in a received frame (in particular, on whether the cyclic redundancy check "CRC" passes for one or more data rates; and on the number of symbol errors detected in the frame at such data rates) (see Chheda, col. 5 lines 3-60, and particularly lines 26-39). Chheda teaches using the FQM is for two distinct purposes.

The primary use of the FQM, as noted in the title, is for the purpose of optimizing channel power control. In this regard, the FQM is used, under certain circumstances such as rapid frame rate changes, to determine an appropriate transmission power step size that should be employed in order to optimally control the power level for a reverse link channel. (See, e.g., col. 4 lines 1-4, as cited by the Examiner). E_b/N_o is the measurement that indicates the effective received power of a data channel, and, as such, a "target E_b/N_o " is the level of received signal power that is desired to be achieved. It must be clearly understood, however, that Chheda teaches using FQM to affect E_b/N_o . In no manner does Chheda teach using E_b/N_o as a basis for any decision ... except, of course, the circular basis of seeing whether E_b/N_o has achieved its target value. The measurement of a parameter in a control loop, of course, circularly affects future values of the same parameter. Chheda, however, does not teach using E_b/N_o to control anything outside the power control loop for which it is the target parameter.

The second use of the FQM is for the purpose of determining which frame a base station controller ("BSC") should choose, when the BSC receives the "same" frame from two different base stations. (This occurs, for example, during CDMA handoffs; see col. 5, lines 15-20, as cited by the Examiner). This is the closest to a suggestion, in Chheda, that is relevant to handoffs. Modifying Czaja according to such teaching of Chheda might result in a combination whereby handoff decisions are based upon the FQM. However, such a combination does not resemble any combination of features claimed by the Applicants.

Combination of Cited References With Respect to Claimed Invention

A combination of Chheda with Czaja does not disclose, teach, or fairly suggest all of the limitations required by (e.g.) Claim 1, either as originally filed, or as presently amended, particularly when the claimed limitations are properly understood in the context of (e.g.) Claim 1. Even if all of the limitations were disclosed, no motivation exists in the cited references for modifying Czaja in accordance with the teaching of Chheda so as to result in any combination of features claimed in the subject application.

Claim 1, as presently amended, recites in part (underlining added for emphasis):

A method of initiating a handoff between a serving base station and a target base station in a CDMA communication system having a plurality of base stations in communication with at least one mobile station ... comprising the steps of:

- a) obtaining a first parameter, E_b/N_t , associated with the serving base station;
- b) obtaining a second parameter, E_b/N_t , associated with the target base station;
- c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset;
- d) returning to step (a) if the first parameter is not less than or equal to the sum of the second parameter and the offset; and
- e) initiating a reverse link handoff between the serving and target base stations if the first parameter is less than or equal to the sum of the second parameter and the offset.

Claimed Elements Not Taught By Czaja

The Examiner acknowledges that Czaja fails to teach "a) obtaining wherein [sic] the first parameter comprises the value of E_b/N_t ; b) obtaining wherein the second parameter comprises the value E_b/N_t , that is associated with the target base station; c) determining if the first parameter is less than or equal to the sum of

the second parameter and an offset; and d) initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.”

The Examiner’s acknowledgement of the failings of Czaja is partly correct. However, because Czaja has no teaching in regard to any comparison between parameters with an offset, Czaja fails to disclose or teach step (d) of Claim 1 as well. As such, Czaja fails to teach any one of the five steps of Claim 1.

Moreover, acknowledgment (d) does not correctly reflect the recitations, in clause (e) of Claim 1, which Czaja fails to teach. The Examiner sets forth acknowledgment (d) as “initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.” However, as noted above, Czaja fails to teach anything about initiating a reverse link handoff, except that a soft reverse link handoff is impractical. Thus, to be more correct, the Examiner should acknowledge that Czaja fails to teach: “initiating a reverse link handoff if the first parameter is less than or equal to the sum of the second parameter and the offset.”

Teaching of Chheda Fails to Remedy the Omissions of Czaja

To render a claim obvious, any combination of features of Czaja with those of Chheda, to which the skilled person might be led, must correspond to limitations of such claim as understood in the context of the claim as a whole.

The features taught by Chheda fail to correspond to claimed elements omitted by Czaja, particularly when those elements are properly understood in context. To support this assertion, each portion of Chheda to which the Examiner points as a source for teaching to modify Czaja is considered in turn, below.

First, Chheda teaches that a single parameter should be employed in a control loop to establish and maintain a desired value of the same single parameter. In this regard, the Examiner points to “FIG. 1, Measure Eb/No 105; [and] col. 2, lines 10-34” as disclosing “the first parameter,” and points to “FIG. 1, Target Eb/No 110; [and] col. 2, lines 10-34” as disclosing “the second parameter.” However, this material in Chheda refers to a comparison between a single parameter, Eb/No, and a desired or target value for that same parameter. Such teaching does not correspond to elements (claimed in, e.g., Claim 1) that are omitted by Czaja. In the context of Claim 1, “the first parameter” is associated with the serving base station, while “the second parameter” is associated with the target base station, and these two parameters are compared to each other (with an offset) to control an unrelated process (handoff). Chheda has no corresponding teaching that could be “substituted in” for omitted elements. Chheda teaches the use of a single signal strength

measurement parameter as feedback in a control loop to control the transmit power of the signal producing such measurement. These are not similar functions, and, accordingly, the teaching of Chheda is simply inapplicable as a modification of Czaja to achieve the features recited in, *e.g.*, Claim 1.

Second, the “offsets” in Chheda do not correspond to the “offsets” required in the context of (*e.g.*) Claim 1. Chheda teaches offsets of target values, which are differences between a previous target for a particular parameter, and a new target for the same parameter. Though useful for the power-control purposes of Chheda, such differences are inapplicable, and do not correspond to elements required in the context of (*e.g.*) Claim 1. Offsets, in (*e.g.*) Claim 1, serve as a level shift in a comparison between different parameters associated with different entities. The teaching of Chheda could be followed, by using the FQM to determine how much to offset or change target values for a controlled parameter. However, the resulting combination of features would not resemble any invention claimed by the Applicants.

This incompatibility of the contexts of Czaja and Chheda is not a small matter. For the optimal power control purposes of Chheda, it would make no sense whatsoever to compare E_b/N_0 from two different base stations. Conversely, however, a comparison of parameters from different base stations is very important to Czaja. Consequently, comparing one parameter to a target value for the same parameter, as taught in Chheda, would not be useful for the purposes of Czaja. Though the names are similar, the elements of Chheda are not equivalent or interchangeable with elements in the context of Czaja, and thus cannot remedy the failings of Czaja.

Third, Chheda has no teaching whatever in regard to “initiating a reverse link handoff if the first parameter is less than or equal to the sum of the second parameter and the offset.” This clause, taken in context, requires making a decision in regard to initiating a reverse link handoff on the basis of different first and second parameters, plus an offset. Neither Czaja nor Chheda teach making a decision to initiate a reverse link handoff on the basis of any parameter, let alone on the basis of two different parameters plus an offset.

Finally, Chheda and Czaja are opposite, because in Chheda the parameter (E_b/N_0) is a target of control, which is the converse of the situation in Czaja, where the parameter (E_c/I_0) is a basis for controlling something else (handoff). To modify Czaja to reflect (*e.g.*) Claim 1, even using impermissible hindsight, Chheda needs to teach at least (i) a suggestion of using the E_b/N_0 parameter to control something (besides itself), (ii) in the context of different such parameters, and (iii) using a comparison between the different parameters that involves an offset. Chheda fails on all three of these counts.

Czaja, as noted, uses a parameter (Ec/Io) to control handoff decisions. The only useful teaching of Chheda for such control of a distinct feature involves using the FQM parameter. Of course, modifying Czaja in accordance with the FQM parameter does not lead to any presently claimed invention.

In summary, the Examiner points to certain features in Chheda to remedy the failures of Czaja to teach all of the limitations required by, for example, Claim 1. However, those features of Chheda, when properly taken in context of the claim as a whole, are seen to be neither similar nor analogous to the elements, required by Claim 1, which Czaja fails to teach. Neither Czaja nor Chheda teach, disclose or fairly suggest "initiating a reverse link handoff ..." based on any criteria. In this context, which involves a comparison of different parameters, both references also fail to teach, disclose, or properly suggest any decision based upon "... if the first parameter is less than or equal to the sum of the second parameter and the offset." Far less, then, do they teach the combination of these limitations. Because both references fail to disclose these limitations, neither can remedy the failure of the other in this regard. Accordingly, the combination of references does not support a *prima facie* case of obviousness for Claim 1. As such, Claim 1, as presently amended but also as previously pending, is nonobvious over Czaja in view of Chheda.

Motivation to Modify Czaja In Accordance with Chheda Achieve Claimed Combination

Even were it reasonably possible to combine Chheda with Czaja to establish a combination of features as is recited, for example, in Claim 1, no motivation exists to make such a combination. For at least the reasons set forth below, the motivation urged by the Examiner does not motivate the modification of a system such as taught by Czaja to achieve any combination of elements claimed by the Applicants. The motivation to which the Examiner points leads, if anything, to an entirely different combination of elements than any that is claimed by the Applicants.

The Examiner first points to col. 4 lines 1-4 of Chheda as motivating the modification of Czaja in accordance with features of Chheda. This passage suggests the use of a Frame Quality Metric (FQM) as the basis for controlling step size. A skilled person following this motivation might be led to use the FQM for something. However, the FQM has nothing to do with Eb/No. It is the use of Eb/No that the Examiner acknowledges is lacking in Czaja, not the use of the FQM. Thus, this cited motivation entirely fails to lead to the claimed invention.

The Examiner points secondly to col. 5 lines 15-20 of Chheda as motivation to modify Czaja in accordance with features of Chheda. This section, too, suggests the use of the FQM, though in this case it is for the purpose of deciding which frame to accept (from between the "same" frame received at different base stations). A skilled person, reading this passage, might be motivated to use the FQM for something. Indeed, it is possible to imagine that the FQM could be used instead of Ec/Io for deciding when to initiate a handoff. However, such a combination is not similar to any invention claimed by the Applicants. The FQM, as noted

several times above, is not based on Eb/No at all, but is based entirely on the success with which the data of frames is decoded. Neither in the sections of Chheda identified by the Examiner, nor elsewhere within the cited references, is there any teaching that would motivate the use an Eb/No parameter for controlling anything (besides itself).

For at least the reasons set forth above, Claim 1 as presently amended is nonobvious, and properly allowable, over a combination of Czaja and Chheda. Limitations incorporated in Claims 12 and 21, as presently amended, and in new Claim 22 (which is substantially the same as Claim 12 as originally filed), are sufficiently similar to those of Claim 1 that the Examiner should readily be able to determine, by application of reasoning similar to that set forth above, that these claims are also nonobvious over the combination of Czaja and Chheda. All other previously pending claims are also nonobvious over Czaja, in view of Chheda, at least by virtue of properly depending from a nonobvious base claim. As such, the Examiner is respectfully requested to withdraw each current rejection of a previously pending claim over Czaja in view of Chheda.

New Claims

As noted above, new independent Claim 22 is substantially similar to Claim 12 as originally filed, and is nonobvious over Czaja in view of Chheda for reasons similar to those set forth above with respect to Claim 1. New Claims 23-25 depend, directly or indirectly, from Claim 12, and thus are nonobvious and properly allowable over the cited prior art at least by virtue of depending from a nonobvious base claim.

New Claim 26 recites in part: "f) determining whether the first parameter is less than or equal to the sum of the second parameter and an offset, and returning to step (a) if not, else initiating a reverse link handoff between the serving and target base stations."

As noted above in the remarks set forth with respect to Claim 1, neither Czaja nor Chheda teach, disclose or fairly suggest initiating a reverse link handoff based on any particular evaluation. Moreover, the recited first and second parameters, per steps (a) and (b) of new Claim 26, are different in that they reflect signals from different base stations. In that context, and for reasons also set forth above in regard to Claim 1, neither Czaja nor Chheda teach, disclose or fairly suggest "determining whether the first parameter is less than or equal to the sum of the second parameter and an offset." Because both of these references fail to disclose these limitations, neither can remedy the failures of the other in that regard. Accordingly, these references, even combined, fail to support a *prima facie* case of obviousness for new Claim 26, which is accordingly nonobvious over Czaja, even in combination with Chheda.

The combination of Czaja and Chheda also fails to support a *prima facie* case of obviousness of new Claim 26 due to an absence of motivation for such combination, for reasons similar to those set forth above

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with respect to Claim 1. The skilled person would not be motivated to modify Czaja in accordance with teaching found in Chheda, except possibly to use the FQM.

For at least the foregoing reasons, it is respectfully submitted that Claim 26 is nonobvious, and properly allowable, over any reasonable combination of the cited references. Accordingly, new Claims 27-31 are also nonobvious and properly allowable over the cited references, at least by virtue of properly depending from new Claim 26.

Conclusion

In view of the foregoing remarks and amendments, it is respectfully submitted that each claim, as presently pending in the subject application, is in condition for immediate allowance. As such, the Examiner is respectfully requested to withdraw each of his grounds for rejection, and to promptly issue a Notice of Allowance in respect of all pending claims.

It is particularly noted that, as set forth above in detail, none of the claims have been narrowed to overcome any of the grounds for rejection set forth in the current Office Action. Accordingly, should the Examiner find new grounds for rejecting any pending claims, a further non-final Office Action setting forth such new grounds is respectfully requested.

The Commissioner is authorized to construe this paper as including a petition to extend the period for response by the number of months necessary to make this paper timely filed. Fees or deficiencies required to cause the response to be complete and timely filed may be charged, and any overpayments should be credited, to our Deposit Account No. 50-0490.

Respectfully submitted,

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